DRAFT

ENVIRONMENTAL ASSESSMENT

NEUMAN LAND AND LIVESTOCK GAME FARM

Montana Department of Fish, Wildlife and Parks
Region 4
4600 Giant Springs Road
Great Falls, Montana 59406

Montana Fish, Wildlife & Parks

Region Four
4600 Giant Springs Road
Great Falls MT 59405
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August 1, 1997

To: Environmental Quality Council, Capitol Building, Helena 59620-1704
Dept. of Health & Environmental Science, Director's Office, Room C108, Cogswell Bldg. Helena 59620-0901
Montana Fish, Wildlife & Parks

Director's Office	Parks Division
Fisheries Division	Wildlife Division
Regional Supervisor	Lands Section
Design and Construction	Legal Unit

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Montana State Library, 1515 East Sixth Avenue, Helena 59620-1800
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George Orchenski, PO Box 689, Helena, 59624
Janet Ellis, Montana Audubon Council, PO Box 595, Helena, 59624
Montana Department of Livestock, Game Farm Applications, 301 Roberts, Helena 59620
Montana Wildlife Federation, PO Box 1175, Helena, 59624
Teton County Commissioners, County Courthouse, 101 Main Ave. S, Choteau MT 59422
Russell Country Sportsmen, PO Box 282, Great Falls MT, 59403
Dan Huidekoper, Teton County Sportsmen Association, PO Box 1025, Choteau MT 59422
Rep John "Sam" Rose, PO Box 604, Choteau MT 59422
Senator Gary Aklestad, PO Box 32, Galata Mt 59444

Ladies and Gentlemen:

The Enclosed Environmental Assessment (EA) has been prepared for Newman Land and Livestock Game Farm and is submitted for your consideration. Please direct your questions or comments to Warden Sergeant Gary Benson, PO Box 6610, Great Falls, MT 59406 (406)454-5840 by August 21, 1997. Thank you.

Sincerely,
Mike Aderhold
Mike Aderhold
Region Four Supervisor

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SUMMARY

ENVIRONMENTAL ASSESSMENT
PROPOSED NEUMAN LAND AND LIVESTOCK GAME FARM

INTRODUCTION

The Montana Department of Fish, Wildlife and Parks (FWP) is required to perform an environmental analysis in accordance with the Montana Environmental Policy Act (MEPA) for each proposal for projects, programs, legislation, and other major actions of state government significantly affecting the quality of the human environment (Administrative Rules of Montana [ARM] 12.2.430). FWP uses environmental assessments (EAs) in the game farm licensing process to identify and evaluate environmental impacts of a proposed game farm. EAs also determine whether the impacts will be significant and whether, as a consequence, FWP will perform a more detailed environmental impact statement (EIS).

When preparing an EA, FWP reviews environmental impacts of the proposed action, impacts of the no action alternative, and impacts of other alternative actions which include recommended and/or mandatory measures to mitigate the project's impacts. A mitigated EA includes alternatives with enforceable requirements (stipulations) which reduce impacts of the proposed action to a level below significance. The EA may also recommend a preferred alternative for the FWP decision maker.

Based upon its review of the Neuman Land and Livestock game farm application, FWP has prepared a mitigated EA.

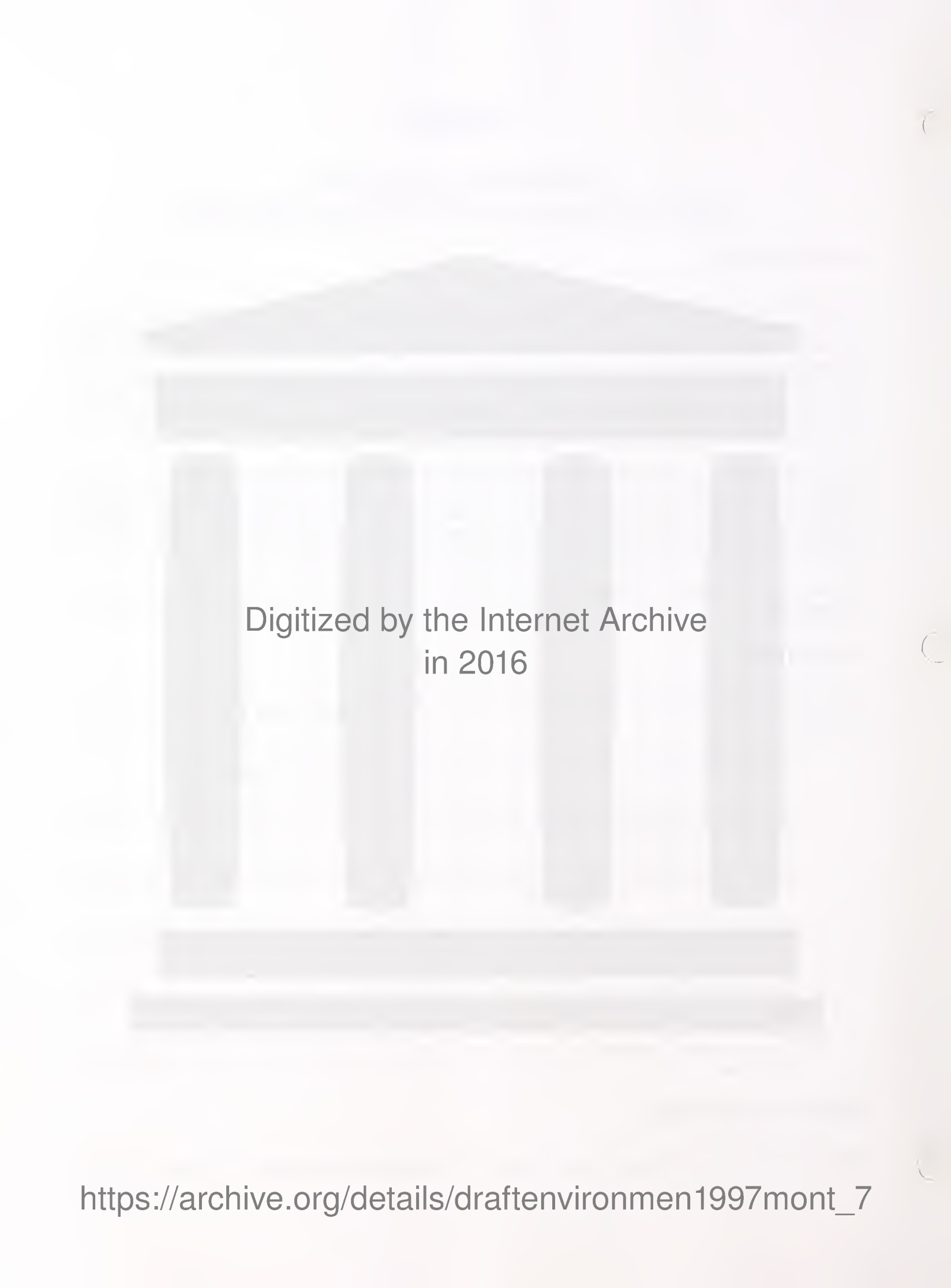
OBJECTIVES

This EA has been prepared to serve the following purposes in accordance with FWP MEPA rules (ARM 12.2.430):

- to ensure that FWP use natural and social sciences in planning and decision making;
- to be used in conjunction with other agency planning and decision-making procedures to make a determination regarding the Proposed Action;
- to assist in the evaluation of reasonable alternatives and the development of conditions, stipulations, and modifications to the Proposed Action,
- to determine the need to prepare an EIS through an initial evaluation and determination of the significance of impacts associated with the Proposed Action;
- to ensure the fullest appropriate opportunity for public review and comment on the Proposed Action; and
- to examine and document the effects of the Proposed Action on the quality of the human environment.

PUBLIC PARTICIPATION

Public involvement in the Environmental Assessment (EA) process includes steps to identify and address



public concerns. The Draft EA will be available for public review and comment from August 1, 1997 until 5pm August 21, 1997 from the Region 4 FWP office at the address listed below. Submit all comments regarding this EA to the same address.

Mr. Gary Benson
Fish, Wildlife and Parks
4600 Giant Springs Road
Great Falls, Montana 59406
(406) 454-5850

PROPOSED ACTION AND ALTERNATIVES

PROPOSED ACTION

The Montana Department of Fish, Wildlife and Parks (FWP) received an application in May 1997 to license a new elk game farm in Teton County. The proposed game farm is located on private land adjacent to Muddy Creek approximately 8 miles northeast of Vaughn, Montana (**Figure 1**). The Proposed Action provides for a 35-acre fenced game farm that would include a quarantine facility (**Figure 2**).

The Proposed Action would manage up to 60 elk on the game farm. The applicant would breed, sell and dispose of elk in accordance with Montana game farm and disease control requirements stipulated in Montana statutes and Administrative Rules. Fence construction would be in accordance with requirements of FWP under ARM 12.6.1503A (Appendix A) unless a waiver is granted by FWP to construct a game-proof fence of an alternative design. The entire facility would be fenced a minimum of 50 feet from the high cut bank of Muddy Creek.

ALTERNATIVES

One alternative (No Action Alternative) is evaluated in this Environmental Assessment (EA). Under the No Action Alternative, FWP would not issue a license for the Neuman game farm as proposed. Therefore, no game farm animals would be placed on the proposed game farm area. Implementation of the No Action Alternative would not preclude other activities allowed under local, state and federal laws to take place at the game farm site.

PURPOSE AND NEED OF THE PROPOSED ACTION

The Neuman game farm would be a commercial enterprise that would provide elk breeding stock to the game farm market.

ROLE OF FWP AND THE DEPARTMENT OF LIVESTOCK

FWP is the lead agency in preparing this EA for the proposed project. This document is written in accordance with the Montana Environmental Quality Council (EQC) Montana Environmental Policy Act (MEPA) Handbook and FWP statutory requirements for preparing an EA under Title 75, Chapter 1, Part 2 Montana Code Annotated (MCA) and FWP rules under ARM 12.2.428 et seq.

FWP shares regulatory responsibilities for new and expanding game farms with the DoL. The DoL is responsible for regulating the health, transportation and identification of game farm animals. During the application process, all quarantine area plans and specifications are submitted to the DoL for approval and inspection of the proposed quarantine facility. No licenses are issued without such approval and inspection.

c:\Gamefrm\Vaughn\Sitemap.dwg

Spring Coulee

Second Road North

Tank Coulee

Proposed Game Farm

Muddy Creek

To Conrad

Interstate 15

To Great Falls

19 20 23 24 25 26 29 30

N

0 Feet 4000

State of Montana
Public Land
National Wildlife Refuge

Note: Ownership Data Derived From Bureau of Land Management Montana Public Lands, 1.100,000 Scale Quadrangles.

MAXIM 5609702535-06

Site Map
Proposed Game Farm EA
Neuman Property
Teton County, Montana
FIGURE 1

c:\Comefrm\Vaughn\Landuse.dwg

Proposed
Game Farm

Quarantine
Area

Second Road North

Coulee

Muddy Creek

N

0 Feet 1500

MAXIM 5609702535-06

- Crop Pasture
- Grass Rangeland
- Other Ag
- Mines/Quarries

Note. Land Use Information Derived From U.S. Geological Survey's Geographic Information Retrieval And Analysis Files, Land Use/ Land Cover

Land Use/Land Cover
Proposed Game Farm EA
Neuman Property
Teton County, Montana
FIGURE 2

AFFECTED ENVIRONMENT

The proposed Neuman game farm is located next to Muddy Creek about halfway between the towns of Power and Vaughn. Approximately one-third of the proposed 35 acre site is situated on nearly level land within the floodplain of Muddy Creek with the balance of the acreage straddling the lower footslopes of the surrounding benchlands. The topography of the lower footslopes consists of two low rolling hills that vary in elevation from approximately 3,500 feet in the Muddy Creek floodplain to 3,600 feet at the top of the higher of the two hills. The hills are oriented parallel to Muddy Creek (northwest by southeast) with the steeper slopes (25 to 35%) facing the northeast. The hills exhibit a terraced character in relation to the surrounding landscape.

Land use in the immediate area of the proposed game farm is grass rangeland, irrigated pasture, native hay, and farming of small grains and forage crops (**Figure 2**). Along the footslopes of the benchlands surrounding the Neuman property, rangeland is the predominant land use. On the broad high benches, both irrigated and dryland agricultural production dominate the landscape. The portion of the Neuman property in the Muddy Creek floodplain is serviced by irrigation ditches. Current land use is native pasture in the valley bottom and rangeland on the rolling hills although no livestock have grazed the property for several years.

LAND RESOURCES

Two soil series have been mapped on the proposed game farm: (1) soils present in the floodplain of Muddy Creek are deep, well-drained, loamy soils developed in alluvium with moderate permeability and slow surface water runoff; and (2) soils present on the hilly slopes and terraces which are generally underlain by shale and capped with gravel along the terrace edges which are generally a deep, well-drained, very cobbly to gravelly loam underlain by extremely gravelly sandy loam having moderately slow permeability and rapid surface runoff is rapid. The erosion hazard for the hillslope soils is slight from wind but severe from water.

WATER RESOURCES

The proposed Neuman game farm is located adjacent to Muddy Creek, an intermittent stream that flows southeast to the Sun River and Missouri River. Approximately one-third of the proposed 35-acre site is situated on nearly level land within the floodplain of Muddy Creek. The remainder of the acreage is on the lower slopes of adjacent rolling hills. Elevation of the project area is about 3,500 feet. Several ponds and associated wetlands exist immediately southeast of the proposed game farm enclosure on the Muddy Creek floodplain. Because the Muddy Creek cutbank is 10 to 12 feet high in the vicinity of the lower Neuman pasture, there is low risk of flooding in the proposed game farm. Bank protection is planned for the Muddy Creek cutbank in the vicinity of the proposed game farm under the direction of the Natural Resources Conservation Service.

Average annual flow in Muddy Creek near the town of Vaughn is 126 cubic feet per second (cfs). Adjacent to the game farm site, Muddy Creek flows year-round. Muddy Creek has been identified by the Montana Department of Environmental Quality (DEQ) as an impaired stream for the purposes of agriculture, aquatic life support, cold water fishery, drinking water supply, recreation and swimming. The probable sources of the impairment are agriculture, flow regulation, irrigated crop production, natural sources, and range land.

Groundwater is presumed to flow southeasterly in shallow alluvium adjacent to Muddy Creek and in deeper bedrock (Colorado Shale) elsewhere in the project area. Depth to groundwater measured in two wells is between 30 and 40 feet below ground surface.

VEGETATION RESOURCES

There are three vegetation types located within the proposed game farm: upland grassland, black cottonwood/introduced pasture grass, and disturbed. The upland grassland is comprised of prairie junegrass, Sandberg bluegrass, western wheatgrass, and cheatgrass, with occasional green needlegrass and needle-and-thread grass. Much of the upland grassland has been used for hay storage, and has a large component of introduced weedy forbs and cheatgrass. The black cottonwood/introduced pasture grass vegetation type is located along Muddy Creek in the northeast corner of the tract. The disturbed area comprises the southeast corner of the tract between the interior access road and Muddy Creek, and is primarily introduced weedy forbs, cheatgrass, and bare ground, and was used for years as a calving ground for cattle.

WILDLIFE RESOURCES

Wetland areas adjacent to the proposed game farm are used by waterfowl and shorebirds. The bottomland area contains some cottonwood trees and willows, and supports some of the more common neotropical migrant birds. A few mule deer use the area and they generally are associated with the breaks of Muddy Creek and some white-tailed deer occur along Muddy Creek. The main mule deer winter range in the area is located near the Sun River south of the proposed game farm (**Figure 3**). Pronghorn are uncommon in the area possibly due to habitat fragmentation by agriculture in the uplands and broken topography along Muddy Creek. A few elk (usually bulls) are reported to pass through this area each summer. The area does not represent important habitat for any Federally listed threatened or endangered species although bald eagle and peregrine falcons could be migratory through this area. There have not been any confirmed wolf sightings in the vicinity of the proposed game farm.

ENVIRONMENTAL CONSEQUENCES

Only resources potentially affected by the Proposed Action are presented in this section.

LAND RESOURCES

The proposed action of raising up to 60 elk on 35 acres poses the heaviest impacts to the soil resource on the slopes of the hills overlooking Muddy Creek. Water erosion could be severe along these slopes if the stocking rate leads to excessive trampling and removal of the binding soil root-mass. The relatively poor productivity of the hill slope soils along with the shallow depth to soft shalely bedrock makes them very susceptible to erosion. In addition, these soils are not likely to easily recover from overstocking.

If vegetation canopy is removed by a considerable amount from overstocking, hoof action in saturated and ponded areas could result in excess compaction and loss of soil structure.

AIR RESOURCES

Minor impacts to air quality from fence construction and road use may result from a short term increase in particulate matter in ambient air. Odor problems may result from waste management practices in areas where elk concentrate to feed.

WATER RESOURCES

Increased runoff and erosion may occur from greater ground disturbance by domestic elk. Runoff from the 35-acre area could reach Muddy Creek adjacent to the game farm during major precipitation events. As described in the Land Resources section, water erosion could be severe on the hill slopes within the game farm area if the stocking rate leads to excessive trampling. Any impacts that would occur to surface water from erosion and runoff are considered to be minor because the existing sediment load in Muddy

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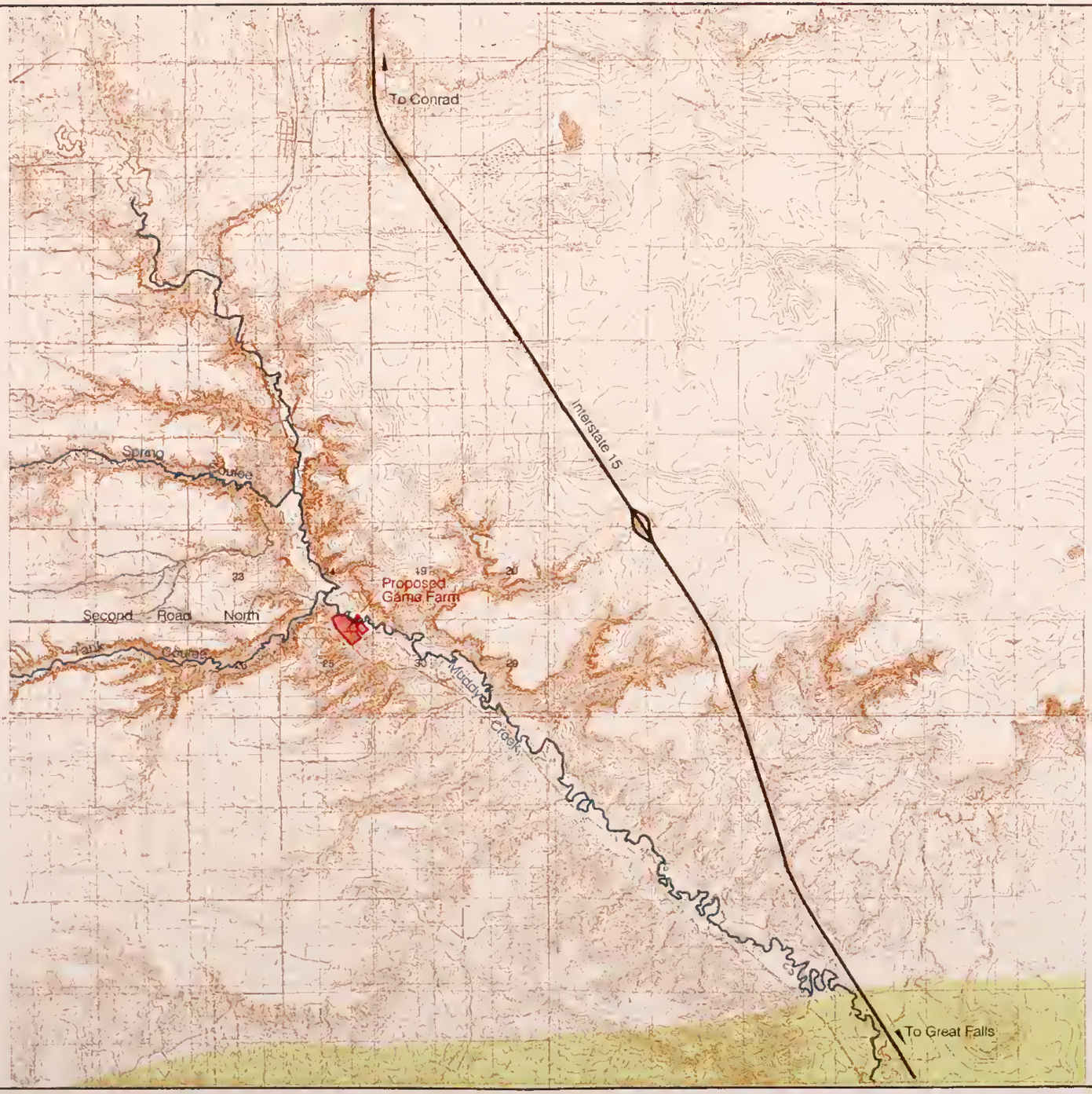

N

0 Feet 7000

Mule Deer Winter Range and Overall Distribution

Note: Wildlife Data Obtained From Montana Department of Fish, Wildlife, and Parks GIS Wildlife Distribution Database.

MAXIM 5609702535-06

Winter Range
Proposed Game Farm EA
Neuman Property
Teton County, Montana
FIGURE 3

Creek is moderate to high, the area proposed for the game farm enclosure is relatively small within the entire drainage basin, and Muddy Creek and the nearby ponds would not be included in the fenced enclosure. Some minor levels of increased sediment could enter the ponds located on the southeast side of the proposed game farm enclosure.

Domestic elk fecal matter and nutrient-enriched water could affect the quality of groundwater and surface water in the vicinity of the game, primarily during periods of snow melt and major precipitation events. As previously stated, Muddy Creek and the nearby ponds would not be included in the proposed game farm enclosure; however, their close proximity to the site would allow increased sedimentation from erosion on the game farm site to enter these water bodies. Water from Muddy Creek is used in the valley for irrigation purposes. The increase in risk of contaminating surface water is considered minor.

Groundwater is relatively shallow (approximately 30 to 40 feet below ground surface) in this area; thus, there is the potential for impacting local groundwater quality. Available water rights data for wells show that two wells are located within a radius of about 1 mile from the game farm site. Potential adverse effects on groundwater quality are considered minor.

VEGETATION RESOURCES

Grazing up to 60 elk on 35 acres would result in the elimination of existing native vegetation over time. If the black cottonwood/introduced pasture grass vegetation type is included in the proposed game farm, the cottonwoods would die over time with elk rubbing and browsing.

Carrying capacity on the property is significantly reduced at this time due to disturbance of much of the land. At the present time, the easterly portion of the proposed game farm has essentially no carrying capacity due to the large component of unpalatable forbs, and dearth of grass species present. The upland grassland has a carrying capacity of 8 elk over a 5 month grazing season.

Based on field reconnaissance and Montana Natural Heritage Program information, there does not appear to be any sensitive plant species within the proposed game farm.

WILDLIFE RESOURCES

The area enclosed by the proposed game farm would consist of approximately 50% upland breaks habitat and 50% bottomland habitat. The proposed action would not result in a significant loss of habitat for big game species because of the limited size of the enclosure. In the upland areas, the conversion of native grasslands to agricultural crops has already significantly changed big game habitat in this area.

No Federally listed threatened or endangered species are known to inhabit the proposed game farm or adjacent areas. The bald eagle and peregrine falcon may cross this area during periods of migration but the proposed game farm would not influence these species.

Mountain lions occasionally pass through this area and may be attracted to the game farm due to the concentration of domestic elk.

There is an undetermined potential of domestic elk carrying or becoming infected with a contagious wildlife disease or parasite such as tuberculosis, chronic wasting disease, or meningeal worm and then coming in contact (through-the-fence, nose-to-nose, nose-to-soil, or ingress/egress) with wild deer, elk, or other wildlife and livestock. Release of a contagious disease in the wild could severely impact native wildlife populations. It is also possible that diseases and parasites carried by wild elk could be introduced to domestic elk with equally severe impacts.

NOISE AND AESTHETICS

The Proposed Action would result in a minor short term increase in existing noise levels from fence construction, land clearing, and other activities conducted to develop the game farm.

CUMULATIVE EFFECTS

The Proposed Action would not result in potential impacts that are individually minor but cumulatively considerable. Cumulative effects from past, present and reasonably foreseeable activities in all resource areas would be similar to those described for the Proposed Action.

EA CONCLUSION

The Montana Environmental Policy Act (MEPA) and the game farm statutes require FWP to conduct an environmental analysis for game farm licensing as described in the Introduction of this Summary. FWP prepares EAs to determine whether a project would have a significant effect on the environment. If FWP determines that a project would have a significant impact that could not be mitigated to less than significant, the FWP would prepare a more detailed Environmental Impact Statement (EIS) before making a decision.

Based on the criteria evaluated in this EA an EIS will not be required. The appropriate level of analysis for the Proposed Action is a mitigated EA because all impacts of the Proposed Action have been accurately identified in the EA, and all identified significant impacts would be mitigated to minor or none.

MITIGATION MEASURES

The mitigation measures described in this section address both minor and significant impacts. FWP will require stipulations to mitigate all potentially significant impacts from the Proposed Action. Potential minor impacts from the Proposed Action are addressed as mitigation measures that are strongly recommended to remain in compliance with state and federal environmental laws, but not required.

REQUIRED STIPULATIONS

The following stipulation is designed to mitigate significant impacts identified in the EA to below the level of significance:

Report the ingress of any wild game animals or egress of domestic elk to FWP immediately. The report must contain the probable reason why or how ingress/egress was achieved.

This stipulation is imposed to mitigate potentially significant risk to wildlife health posed by the proposed game farm. Risk to wildlife health from contact between game farm animals and wild game is potentially significant due to the following factors:

- the site would be located in an area currently utilized by wild game;
- fencing would cross steep terrain, increasing the risk of wild deer jumping the fence;

The information provided by the stipulation would help both the applicant and FWP to address ingress and egress incidents and to minimize contact between wild and domestic animals. This stipulation, in addition to existing FWP fencing and wildlife protection requirements, would effectively reduce the risk to wildlife health to below significant.

RECOMMENDED MITIGATION MEASURES:

The following mitigation measures address minor impacts identified in the EA that are likely to result from the Proposed Action.

Land Resources

Mitigate increased particulate matter through dust management activities such as spraying water on unpaved roads during the dry season, vegetating exposed ground where possible, protecting fill piles from wind erosion, and limiting ground disturbance to only the area necessary to complete the job.

Maintain a reasonable stocking rate within the game farm enclosures to minimize changes in soil structure and potential increases in runoff and water erosion from disturbed ground. A "reasonable stocking rate" is defined under the introduction to Part II. Environmental Review.

Air Resources

Employ the following mitigation measures to reduce odor problems if they occur:

- create a buffer zone between waste management areas and neighbors considering wind direction and timing when moving waste;
- if waste is land-applied, incorporate waste into soil quickly by plowing or discing and spread waste during cool weather or in the morning during warm, dry weather.
- Carcasses of animals buried on the game farm must be covered with a minimum of 2 feet of soil and must be buried at a distance greater than 200 feet from a highway and greater than one-mile from any residence. Carcasses may also be sent to a licensed municipal landfill if approved by the landfill operator. Carcasses can not be disposed of in water bodies, roads, or ditches.

Water Resources

The Montana Department of Environmental Quality (DEQ) administers and enforces water quality laws relating to pollution from point and nonpoint sources. Facilities that qualify as "concentrated animal feeding operations" are considered point sources of pollution and may require permits. Facilities that allow game farm animals access to surface water or that contaminate runoff to surface or groundwater may be considered nonpoint sources of pollution and are subject to the prohibitions against the pollution and non-degradation of state water. The following management practices are recommended to minimize the risk of discharging pollutants to state waters:

- Locate game farm perimeter fence adjacent to Muddy Creek and the nearby ponds at least 50 feet from the edge of these water bodies to prevent direct impacts to the banks and wetland areas.
- Control surface water runoff discharges to Muddy Creek and the nearby ponds by employing best management practices along the fence line where surface water could directly enter these water bodies. Best management practices may include berming or construction of straw bale dikes at surface water discharge points.
- Maintain a reasonable stocking rate within the game farm enclosures to minimize potential impacts from erosion and fecal matter. Potential water quality impacts could also be mitigated by moving dead animals and excess fecal matter away from the creek and ponds, and burying the animals and composting the fecal matter.

Vegetation Resources

- Maintain a reasonable stocking rate for elk that would maintain adequate vegetative cover to maintain and/or stabilize soils; seed and irrigate (where possible) highly disturbed areas to establish vegetative cover which would help stabilize soils and provide some forage for elk;

- Keep elk off seeded areas until vegetation becomes established;

- Institute a rest-rotation grazing system to optimize vegetative productivity and minimize vegetation and soil degredation; use only certified weed seed free hay or pellets to feed elk; and

- Collaborate with the Teton County Weed and Mosquito Control District in the design and implementation of a weed control plan for the game farm.

Fish and Wildlife Resources

The following standard game farm management practices would help to minimize impacts to free ranging wildlife and fish species:

- Store hay, feed, and salt away from exterior fences or enclosed in bear-resistant containers or buildings.

- Feed game farm animals at interior portions of the enclosure and not along the perimeter fence.

- Remove dead animals, excess fecal material, and waste feed from the game farm and place at an approved site not likely to be used by humans, and domestic animals and wild animals.

- Inspect the exterior game farm fence on a regular basis and immediately after events likely to damage the fence to insure its integrity with respect to trees, burrowing animals, predators and other game animals.

- If fence integrity or ingress/egress becomes a problem, adjustment of fence requirements to include double fencing or increased height may become necessary.

- During winters of exceptional snow cover, remove snow on either side the of the enclosure fence to prevent ingress and egress.

- Mitigate corrosion of perimeter fence structures by using noncorrosive fencing materials;

- Risk of disease epidemic or heavy parasite infections among domestic elk can be minimized by maintaining a reasonable domestic elk stocking rate in relation to the enclosure size, periodic removal of domestic elk manure from concentration areas, and development of a disease immunization and parasite treatment protocol as applicable to domestic elk. For the purposes of this EA, a "reasonable stocking rate" is defined as the density of animals appropriate to maintain vegetative cover in pasture condition that minimizes soil erosion from major precipitation events and snowmelt.

Noise

Minimize impacts to neighbors from construction noise by limiting noisy activities to daylight hours and completing construction as soon as possible.

Cultural Resources

Mitigate impacts to cultural resources by stopping work in the area of any observed archeological artifact. Report discovery of historical objects to:

Montana Historical Society
Historic Preservation Office
1410 8th Avenue; P.O. Box 201202
Helena, Montana 59620
(406) 444-7715.

If work stoppage in the area containing observed artifacts is not possible, record the location and position of each object, take pictures and preserve the artifact(s).

ENVIRONMENTAL ASSESSMENT CHECKLIST

PART I. GAME FARM LICENSE APPLICATION

Montana Fish, Wildlife & Park's authority to regulate game farms is contained in sections 87-4-406 through 87-4-424, MCA and ARM 12.6.1501 through 12.6.1519.

1. **Name of Project:** Neuman Land and Livestock, Inc. Game Farm

   Date of Acceptance of Completed Application: May 2, 1997

2. **Name, Address and Phone Number of Applicant(s):**

   Neuman Land and Livestock Company
   William K. Neuman
   Collette M. Neuman
   Brandon M. Neuman
   1490 2nd Road
   N.E. Vaughn, Montana 59487

3. **If Applicable:**

   Estimated Construction/Commencement Date: after license is issued

   Estimated Completion Date: 1 year after license is issued

   Is this an application for expansion of existing facility or is a future expansion contemplated?

   This is an application for a new facility.

4. **Location Affected by Proposed Action (county, range and township):**

   Teton County
   SE ¼ of Section 24 Township 22 North, Range 1 West; and
   NE ¼ of Section 25, Township 22 North, Range 1 West/

5. **Project Size:** Estimate the number of acres that would be directly affected that are currently:

   (a) Developed:
   residential....._____ acres
   industrial....._____ acres

   (b) Open Space/Woodlands/Areas...___ acres

   (c) Wetlands/Riparian Areas..... ___ acres

   (d) Floodplain..._____ acres

   (e) Productive:
   irrigated cropland._____ acres
   dry cropland....._____ acres
   forestry....._____ acres
   rangeland..... 35 acres
   other....._____acres

6. **Map/site plan:**

The following maps are included in the introductory summary of this EA:

Figure 1: Site Map Showing Land Ownership
Figure 2: Site Map Showing Land Use and Land Cover
Figure 3: Site Map Showing Big Game Winter Range

7. **Narrative Summary of the Proposed Action or Project including the Benefits and Purpose of the Proposed Action:**

The Proposed Action provides for the licensing of a new 35-acre elk game farm (**Figure 1**) in Teton county. The proposed game farm would be located in the Muddy Creek watershed approximately 8 miles northwest of Vaughn, Montana and would be composed of two adjacent pastures: a partially subirrigated lower pasture approximately 5 acres in size that would contain a quarantine facility, and a drier upper pasture, approximately 30 acres in size.

Fence design and construction would be in accordance with requirements of FWP under ARM 12.6.1503A (Appendix A) unless a waiver is granted by FWP to construct a game-proof fence of an alternative design.

The quarantine facility would be located in the lower pasture (**Figure 2**). The quarantine facility would be approximately 1,800 square feet and enclosed with a 10-foot high solid wood fence. Quarantine facility plans for the proposed Neuman game farm are currently under review by DoL.

The proposed game farm would stock up to 60 elk. The applicant would breed, sell and dispose of game farm elk in accordance with Montana game farm and disease control requirements stipulated in Title 87, Chapter 4, Part 4 MCA and Title 81, Chapter 2, Part 7, MCA.

The proposed game farm area is currently owned by the Neuman Land and Livestock Company. William Neuman has 25 years ranch experience raising his own beef cattle and has had two-weeks experience working on an elk game farm in New Zealand. Brandon Neuman is currently attending Montana State University with a major in Plant Science and has worked for 6 months on an elk farm in New Zealand.

The purpose of the Neuman game farm would be to breed and sell game farm elk. Game farm elk from the Neuman game farm would be produced to supply market demand for breeding animals and antlers.

8. **Listing of any other Local, State or Federal agency that has overlapping or additional jurisdiction:**

(a) Permits:

Agency Name	Permit	Approval Date and Number
Department of Livestock	approval of quarantine and handling facility	Pending

(b) Funding:

Agency Name	Funding Amount
none	

(c) Other Overlapping or Additional Jurisdictional Responsibilities:

Agency Name	Type of Responsibility
Montana Department of Livestock	disease control
Montana Department of Environmental Quality (DEQ)	water quality, air quality waste management
Montana State Historical Preservation Office (SHPO)	cultural resources
Montana Department of Natural Resources and Conservation	water rights
Natural Resource Conservation Service	soil conservation
Teton County Conservation District	stream crossings
U.S. Army Corps of Engineers	wetlands
Teton County Weed Control District	weed control

9. List of Agencies Consulted During Preparation of the EA:

Montana Department of Livestock

Montana Department of Environmental Quality

Montana State Historical Preservation Office

Montana Bureau of Mines and Geology

Montana Department of Natural Resources and Conservation

U.S. Department of Agriculture, Natural Resource Conservation Service

Teton County Conservation District

U.S. Forest Service

PART II. ENVIRONMENTAL REVIEW

This section of the EA presents results of an environmental review of the Proposed Action. The assessment evaluated direct and indirect impacts and cumulative effects of the Proposed Action on the following resources of the physical environment: land, air, water, vegetation, fish and wildlife; and the following concerns of the human environment: noise, land use, human health risk, community impacts, public services and taxes, aesthetics and recreation, and cultural and historical resources. Impacts were determined to fall in one of four categories: unknown, none, minor and significant. For the purposes of this EA, and in accordance with ARM 12.2.429 through 12.2. 431, these terms are defined as follows:

Cumulative Effects: The collective impacts on the human environment of the Proposed action when considered in conjunction with other past and present actions related to the Proposed Action by location or generic type. Related future actions must also be considered when these actions are under concurrent consideration by any state agency through pre-impact statement studies, separate impacts statement evaluation, or permit processing procedures.

Unknown Impacts: Information is not available to facilitate a reasonable prediction of potential impacts.

Significant Impacts: A determination of significance of an impact in this EA is based on individual and cumulative impacts from the Proposed Action. If the Proposed Action results in significant impacts that can not be effectively mitigated, FWP must prepare an Environmental Impact Statement (EIS). The following criteria is considered in determining the significance of each impact on the quality of the human environment:

- the severity, duration, geographic extent and frequency of occurrence of the impact;
- the probability that the impact will occur if the Proposed action occurs;
- growth-inducing or growth-inhibiting aspects of the impact, including the relationship or contribution of the impact to cumulative effects;
- the quantity and quality of each environmental resource or value that would be affected, including the uniqueness and fragility of those resources or values;
- the importance to the state and to society of each environmental resource or value that would be affected;
- any precedent that would be set as a result of an impact of the Proposed Action that would commit FWP to future actions with significant impacts or a decision in principle about such future actions; and
- potential conflict with local, state, or federal laws, requirements, or formal plans.

Reasonable Stocking Rate: The density of animals appropriate to maintain vegetative cover in pasture condition that minimizes soil erosion from major precipitation events and snowmelt.

PHYSICAL ENVIRONMENT

1. LAND RESOURCES Would the proposed action result in:	POTENTIAL IMPACT				CAN IMPACT BE MITIGATED	COMMENT INDEX
	UNKNOWN	NONE	MINOR	SIGNIFICANT		
a. Soil instability or changes in geologic substructure?						
b. Disruption, displacement, erosion, compaction, moisture loss, or over-covering of soil which would reduce productivity or fertility?					Yes	1(b)
c. Destruction, covering or modification of any unique geologic or physical features?						
d. Changes in siltation, deposition or erosion patterns that may modify the channel of a river or stream or the bed or shore of a lake?					Yes	1(d)

AFFECTED ENVIRONMENT:

The proposed Neuman game farm is located next to Muddy Creek about halfway between the towns of Power and Vaughn. Approximately one-third of the proposed 35 acre site is situated on nearly level land within the floodplain of Muddy Creek with the balance of the acreage straddling the lower footslopes of the surrounding benchlands. The topography of the lower footslopes consists of two low rolling hills that vary in elevation from approximately 3,500 feet in the Muddy Creek floodplain to 3,600 feet at the top of the higher of the two hills. The hills are oriented parallel to Muddy Creek (northwest by southeast) with the steeper slopes (25 to 35%) facing the northeast. The hills exhibit a terraced character in relation to the surrounding landscape.

The predominant land use in the immediate area of the proposed game farm is grass rangeland, irrigated pasture, native hay, and farming of small grains and forage crops (**Figure 2**). Along the footslopes of the benchlands surrounding the Neuman property, rangeland is the predominant land use. On the broad high benches, both irrigated and dryland agricultural production dominate the landscape. The portion of the Neuman property in the Muddy Creek floodplain is serviced by irrigation ditches. Current land use is native pasture in the valley bottom and rangeland on the rolling hills although no livestock have grazed the property for several years (Neuman 1997).

Geologic materials in the vicinity of the proposed game farm are soft gray shales and interbedded sandstones and siltstones of the Cretaceous Colorado Shale. The area in the vicinity of the game farm is near the terminus of continental glaciation and was likely covered during glacial times by Glacial Lake Great Falls (Veseth and Montagne, 1980).

Two soil series have been mapped by the Natural Resource Conservation Service (NRCS) on the proposed game farm property, the Havre and Crago-Yawdim Complex (USDA, 1982). The Havre soils are present in the floodplain of Muddy Creek and consist of deep, well-drained, loamy soils developed in alluvium. These soils are calcareous and exhibit a moderately alkaline reaction. The loamy surface layer is underlain by sandy loams, silt loams, and silty clay loams. Permeability is moderate, surface water runoff is slow, and the hazard of water and wind erosion is slight.

The Crago-Yawdim Complex lie on the hilly slopes and terraces which are generally underlain by shale and capped with gravel along the terrace edges. In this complex, Crago soils occupy the terrace edges and

upper slopes and the Yawdim occupy the steeper slopes below the rim of the gravel mantles. The Crago is generally a deep, well-drained, very cobbly to gravelly loam underlain by extremely gravelly sandy loam. Permeability is moderately slow in the surface layer, surface runoff is rapid, and available water capacity is low. The Yawdim soils are generally shallow (10 to 20 inches thick), well-drained, silty clay loams that lie above soft platy shale. Permeability is slow, available water capacity very low, and the reaction moderately alkaline. The erosion hazard for the Crago-Yawdim Complex is slight from wind but severe from water.

PROPOSED ACTION:

1(b) The proposed action of raising up to 60 elk on 35 acres poses the heaviest impacts to the soil resource on the slopes of the hills overlooking Muddy Creek. Water erosion could be severe along these slopes if the stocking rate leads to excessive trampling and removal of the binding soil root-mass. The relatively poor productivity of the Crago-Yawdim Complex along with the shallow depth to soft shalely bedrock makes them very susceptible to erosion. In addition, these soils are not likely to easily recover from overstocking. Roads constructed across these slopes may be unstable due to the high shrink-swell potential and low soil strength of the Yawdim soils. Because the permeability of the Crago-Yawdim Complex is slow to moderately slow, maintaining an adequate vegetative cover is essential to mitigating potential soil erosion.

Soil erosion in the floodplain of Muddy Creek is expected to be slight due to the flat slopes and more productive Havre loam soils in this area. Some impacts could occur to these floodplain soils during periods of heavy rains or snowmelts if the stocking rate exceeds the carrying capacity of the enclosure. If vegetation canopy is removed by a considerable amount from overstocking, hoof action in saturated and ponded areas could result in excess compaction and loss of soil structure.

1(d) While the banks of Muddy Creek are proposed to be fenced out of the game farm enclosure, a reduction in vegetative cover could lead to increased surface runoff to the stream, potentially impacting the stability of the banks at the surface water runoff point-of-entry(ies) into the creek.

NO ACTION:

The no action alternative would not affect the productivity of the soil or land resources if the owners of the property continue to maintain the native hay pasture in its existing condition. Depending on future land use in lieu of using the area for a game farm, other uses such as livestock grazing could have as great or greater impacts to the soil resource as the proposed action.

CUMULATIVE EFFECTS:

As this area is used for agricultural production and rangeland, the cumulative effect of using the proposed area as a game farm is expected to be slight. The proposed game farm does not contain any unique or significant soil or land resources that would be lost due to the proposed land use change.

COMMENTS:

The moderate alkalinity of the soil results in a high risk of corrosion for uncoated steel. This characteristic should be considered when designing the fence.

Required Stipulations:

none

Recommended Mitigation Measures:

Use coated steel or treated wood for fence posts.

Control surface water runoff discharges to Muddy Creek by employing best management practices along the fence line where surface water could directly enter irrigation ditches or Muddy Creek. Best management practices may include berming or construction of straw bale dikes at surface water discharge points.

Maintain a reasonable stocking rate within the game farm enclosures to minimize changes in soil structure and potential increases in runoff and water erosion from disturbed ground. A "reasonable stocking rate" is defined under the introduction to Part II. Environmental Review.

REFERENCES:

U.S. Department of Agriculture, Soil Conservation Service. 1982. Soil Survey of Cascade County Area, Montana. USDA SCS in cooperation with Montana Agricultural Experiment Station. USDA, Washington, D.C. 329 pages with plates.

Veseth, Roger and Clifford Montagne. 1980. Geologic Parent Materials of Montana Soils. Montana Agricultural Experiment Station, Bulletin 721, Montana State University, Bozeman, and USDA Soil Conservation Service, Bozeman, Montana, November. 115 pages.

Neuman 1997. Personal Communication with William Neuman, game farm applicant and Doug Rogness, Maxim hydrologist, June 1997.

PHYSICAL ENVIRONMENT

2. AIR Would the proposed action result in:	POTENTIAL IMPACT				CAN IMPACT BE MITIGATED	COMMENT INDEX
	UNKNOWN	NONE	MINOR	SIGNIFICANT		
a. Emission of air pollutants or deterioration of ambient air quality?					Yes	2(a)
b. Creation of objectionable odors?					Yes	2(b)
c. Alteration of air movement, moisture, or temperature patterns or any change in climate, either locally or regionally?						
d. Adverse effects on vegetation, including crops, due to increased emissions of pollutants?						

AFFECTED ENVIRONMENT:

The proposed Neuman game farm is located in a rural area approximately 20 miles northeast of the location of the nearest air quality monitoring station located at the city of Great Falls (Cain 1997). Because no industrial or commercial facilities are located near the area of the proposed game farm, nearby roads do not experience high traffic usage, and climate conditions result in frequent windy days, the proposed Neuman game farm area currently has good to excellent air quality.

The climate in the vicinity of the proposed game farm is semiarid, marked by cold winters and warm summers. Wind direction is primarily from the west. Mean annual precipitation is 10 - 14 inches per year (NRCS 1995). Temperatures range from -40° Fahrenheit (F) to 110° F.

PROPOSED ACTION:

The impact of the proposed game farm on air quality from the Proposed Action would be minimal to none. The following impacts to ambient air from particulate matter and odors may occur as a result of the Proposed Action.

2(a) Impacts to air quality from fence construction and road use may result in a short term increase in particulate matter in ambient air from traffic and ground clearing.

2(b) Odor problems may result if waste management practices do not address odor control in areas where elk concentrate to feed.

NO ACTION:

No impacts to air quality are expected to result from the No Action alternative.

CUMULATIVE EFFECTS:

No additional impacts from past, present or reasonably foreseeable activities near the proposed game farm are anticipated.

COMMENTS:

Dust and odor are not expected to be of concern at the proposed game farm site due to the distance to the nearest residence and sparse population in this area. If dust and/or odor problems arise, mitigation measures can be implemented.

Required Stipulations:

None

Recommended Mitigation Measures:

2(a) Dust management activities include spraying water on unpaved roads during the dry season, vegating exposed ground where possible, protecting fill piles from wind erosion, and limiting ground disturbance to only the area necessary to complete the job.

2(b) Employ the following Best Management Practices to reduce odor problems if they occur: create a buffer zone between waste management areas and neighbors considering wind direction and timing when moving waste; if waste is land applied, incorporate waste into soil quickly by plowing or discing and spread waste during cool weather or in the morning during warm, dry weather, and cover buried animal carcasses on the game farm with a minimum of 2 feet of soil and at a distance greater than 1-mile from any residence; carcasses may also be sent to a licensed municipal landfill if approved by the landfill operator; carcasses should not be disposed of in or adjacent to water bodies, roads, and ditches. These and other BMPs are described in "Guide to Animal Waste Management and Water Quality Protection in Montana" published by DEQ in 1996.

REFERENCES

Cain, Cyra. 1997. Personal Communication with Cyra Cain, Air Quality Specialist, Montana Department of Environmental Quality, with John Greenheck, Maxim Technologies, May 30, 1997.

NRCS 1995. U.S. Department of Agriculture Natural Resources Conservation Service Report on the Montana Annual Precipitation averages during the period from 1961 through 1990.

PHYSICAL ENVIRONMENT

3. WATER Will the proposed action result in:	POTENTIAL IMPACT				CAN IMPACT BE MITIGATED	COMMENT INDEX
	UNKNOWN	NONE	MINOR	SIGNIFICANT		
a. Discharge into surface water or any alteration of surface water quality including but not limited to temperature, dissolved oxygen or turbidity?					Yes	3(a)
b. Changes in drainage patterns or the rate and amount of surface runoff?					Yes	3(a)
c. Alteration of the course or magnitude of flood water or other flows?						
d. Changes in the amount of surface water in any water body or creation of a new water body?						
e. Exposure of people or property to water related hazards such as flooding?						
f. Changes in the quality of groundwater?					Yes	3(f)
g. Changes in the quantity of groundwater?						
h. Increase in risk of contamination of surface or groundwater?					Yes	3(f)
i. Violation of the Montana non-degradation statute?						
j. Effects on any existing water right or reservation?						
k. Effects on other water users as a result of any alteration in surface or groundwater quality?						
l. Effects on other water users as a result of any alteration in surface or groundwater quantity?						

AFFECTED ENVIRONMENT:

The proposed Neuman game farm is located adjacent to Muddy Creek, an intermittent stream that flows southeast to the Sun River and Missouri River (U.S. Geological Survey [USGS], 1909). Approximately one-third of the proposed 35-acre site is situated on nearly level land within the floodplain of Muddy Creek. The remainder of the acreage is on the lower slopes of adjacent rolling hills. Elevation of the project area is about 3,500 feet. Several ponds and associated wetlands exist immediately southeast of the proposed game farm enclosure on the Muddy Creek floodplain.

The USGS (1996) has measured flow in Muddy Creek near the town of Vaughn during the periods 1925-26, 1934-68, and 1971 to current year. Based on these flow measurements for the period of record, average annual flow is 126 cubic feet per second (cfs); highest and lowest daily mean flow rates are 3,500 cfs and 5 cfs, respectively (USGS 1996). Adjacent to the game farm site, Muddy Creek reportedly flows year-round (Neuman 1997). Suspended sediment is relatively high in Muddy Creek, averaging 460 milligrams per liter (mg/L) from nine samples collected from November 1994 through September 1995 (USGS 1996). Nitrate+nitrite concentrations during the same period ranged from 0.9 to 4.8 mg/L (USGS 1996).

The cutbank of Muddy Creek is eroding in the vicinity of the proposed game farm. Bank stabilization measures are underway and include: plans for placing rock riprap under the direction of the NRCS and a current vegetation program by Newman Land and Livestock to create an effective root binding mass on the bank of Muddy Creek (NRCS 1997).

Groundwater is presumed to flow southeasterly in shallow alluvium adjacent to Muddy Creek and in deeper bedrock (Colorado Shale) elsewhere in the project area. Depth to groundwater measured in two wells located in Section 25 (T22N, R01W) is between 30 and 40 feet below ground surface (Montana Bureau of Mines and Geology [MBMG], 1997). One of the wells is owned by Mr. Neuman and is located near the southeast side of the proposed game farm enclosure; this well is 98 feet deep with a static water level of about 39 feet below ground surface (MBMG 1997).

PROPOSED ACTION:

3(a) Increased runoff and erosion may occur from greater ground disturbance by domestic elk. Runoff from the 35-acre area could reach Muddy Creek adjacent to the game farm during major precipitation events. As described in the Land Resources section, water erosion could be severe on the hill slopes within the game farm area if the stocking rate leads to excessive trampling. Any impacts that would occur to surface water from erosion and runoff are considered to be minor because the existing sediment load in Muddy Creek is moderate to high, the area proposed for the game farm enclosure is relatively small within the entire drainage basin, and Muddy Creek and the nearby ponds would not be included in the fenced enclosure. Some minor levels of increased sediment could enter the ponds located on the southeast side of the proposed game farm enclosure.

3(f) Domestic elk fecal matter and nutrient-enriched water could affect the quality of groundwater and surface water in the vicinity of the game, primarily during periods of snow melt and major precipitation events. As previously stated, Muddy Creek and the nearby ponds would not be included in the proposed game farm enclosure; however, their close proximity to the site would allow increased sedimentation from erosion on the game farm site to enter these water bodies. Water from Muddy Creek is used in the valley for irrigation purposes. The increase in risk of contaminating surface water is considered minor.

Groundwater is relatively shallow (approximately 30 to 40 feet below ground surface) in this area; thus, there is the potential for impacting local groundwater quality. Available water rights data for wells show that two wells are located within a radius of about 1 mile from the game farm site: (1) Neuman well located adjacent to the game farm site; and (2) Grams well located southwest and upgradient from the game farm site (MBMG 1997 and Montana Department of Natural Resources and Conservation, 1997). Water from the Neuman well will be used for the game farm animals and is not used for human consumption. Potential adverse effects on groundwater quality are considered minor.

NO ACTION:

The No Action Alternative would not affect water resources at the proposed game farm site. Depending on other possible future land uses, some activities such as livestock grazing could have as great or greater impacts to water resources as the Proposed Action.

CUMULATIVE EFFECTS:

The surrounding areas are used primarily for agriculture and livestock grazing, with scattered house development. No cumulative effects from past, present, or reasonably foreseeable activities near the proposed game farm are anticipated.

COMMENTS:

Due to potential minor impacts from increased erosion, sedimentation, and elk fecal matter, several mitigation measures are recommended.

Required Stipulations:

None.

Recommended Mitigation Measures:

The Montana Department of Environmental Quality (DEQ) administers and enforces water quality laws relating to pollution from point and nonpoint sources. Facilities that qualify as "concentrated animal feeding operations" are considered point sources of pollution and may require permits under Title 75, Chapter 5, Part 6, MCA, and ARM 17.30.1330 (also see 40 CFR §122.23 and Appendix B to Part 122), et seq. Facilities that allow game farm animals access to surface water or that cause contamination of surface or groundwater may be considered nonpoint sources of pollution and are subject to the prohibitions against the pollution and non-degradation of state waters in Title 75, Chapter 5, Parts 3 and 6, MCA, and ARM 17.20.701 et seq. Nonpoint sources of pollution are considered non-significant sources of degradation where reasonable land, soil, and water conservation practices are applied and existing and anticipated beneficial uses will be fully protected (ARM 17.30.716). Facilities that cause significant sources of degradation must apply to DEQ for an authorization to degrade and undergo a nondegradation review to evaluate the nature of the discharge in relation to the quality of the receiving water.

Due to potential minor impacts identified above from increased erosion, sedimentation and elk fecal matter, several mitigation measures are recommended. Other water quality protection practices may be required by DEQ if it is determined that a CAFO permit is necessary. Refer to "Guide to Animal Waste Management and Water Quality Protection in Montana" (DEQ 1996) and "Common Sense and Water Quality, A Handbook for Livestock Producers" (Montana Department of Health and Environmental Sciences, 1994) for further information on mitigation measures and CAFO permits. The following management practices are recommended to minimize the risk of discharging pollutants to state water:

Locate game farm perimeter fence at least 50 feet from the edge of water bodies to prevent direct impacts to the stream banks and wetland areas.

Control surface water runoff discharges to Muddy Creek and the nearby ponds by employing best management practices along the fence line where surface water could directly enter these water bodies. Best management practices may include berming or construction of straw bale dikes at surface water discharge points.

Maintain a reasonable stocking rate within the game farm enclosures to minimize potential impacts from erosion and fecal matter. Potential water quality impacts could also be mitigated by moving dead animals and excess fecal matter away from the creek and ponds, and burying the animals and composting the fecal matter. Refer to the DEQ publication "Guide to Animal Waste Management and Water Quality Protection in Montana" printed 1996 for additional waste management guidance.

REFERENCES:

Montana Bureau of Mines and Geology (MBMG), 1997b. Computer file search of well logs. Butte MBMG office. May 1997.

Montana Department of Natural Resources and Conservation (DNRC), 1997b. Computer file search of water rights. Helena DNRC office. May 1997.

Neuman, S., 1997b. Game farm applicant; personal communication with Doug Rogness of Maxim Technologies, Inc. June 1997.

NRCS, 1997b. U.S. Department of Agriculture Natural Resources Conservation Service. Personal communication with Alan Rollo (NRCS). July 1997.

U.S. Geological Survey (USGS), 1996b. Water Resources Data, Montana, Water Year 1995. USGS Water-Data Report MT-95-1.

____, 1909b. Geology and Water Resources of the Great Falls Region, Montana. Water Supply Paper 221.

PHYSICAL ENVIRONMENT

4. VEGETATION Would the proposed action result in:	POTENTIAL IMPACT UNKNOWN	NONE	MINOR	SIGNIFICANT	CAN IMPACT BE MITIGATED	COMMENT INDEX
a. Changes in the diversity, productivity or abundance of plant species?					Yes	4(a)
b. Alteration of a plant community?					Yes	4(a)
c. Adverse effects on any unique, rare, threatened, or endangered species?						4(c)
d. Reduction in acreage or productivity of any agricultural land?						
e. Establishment or spread of noxious weeds?					Yes	4(e)

AFFECTED ENVIRONMENT:

There are three vegetation types located within the proposed game farm: upland grassland, black cottonwood/introduced pasture grass, and disturbed. The upland grassland is located between the county road to the west, and the black cottonwood/ introduced pasture grass type along Muddy Creek. It is comprised of prairie junegrass, Sandberg bluegrass, western wheatgrass, and cheatgrass, with occasional green needlegrass and needle-and-thread grass. Much of the upland grassland has been used for hay storage, and has a large component of introduced weedy forbs and cheatgrass. The black cottonwood/introduced pasture grass vegetation type is located along Muddy Creek in the northeast corner of the tract. The disturbed area comprises the southeast corner of the tract between the interior access road and Muddy Creek, and is primarily introduced weedy forbs, cheatgrass, and bare ground, and was used for years as a calving ground for cattle (Neuman 1997).

PROPOSED ACTION:

4(a) Much of the proposed game farm is disturbed, and comprised of weedy forb and/or grass species, or bare ground. The knoll in the southwest corner of the tract is the least disturbed, but because of steep topography is the most vulnerable to overgrazing. Grazing up to 60 elk on 35 acres would result in the elimination of existing native vegetation over time. If the black cottonwood/introduced pasture grass vegetation type is included in the proposed game farm, the cottonwoods would die over time with elk rubbing and browsing.

While elimination of native vegetation on the proposed game farm is not significant by itself, the cumulative impacts of all development would eventually reduce the quality and quantity of habitat for wildlife and humans. Small encroachments over time eventually result in significant impacts on biological systems.

Carrying capacity on the property is significantly reduced at this time due to disturbance of much of the land. At the present time, the easterly portion of the proposed game farm has essentially no carrying capacity due to the large component of unpalatable forbs, and dearth of grass species present. The upland grassland has a carrying capacity of 8 elk over a 5 month grazing season.

4(c) Based on field reconnaissance and Montana Natural Heritage Program information, there does not appear to be any sensitive plant species within the proposed game farm.

4(e) Leafy spurge is present on the property in the black cottonwood/introduced pasture grass type along Muddy Creek. Elk do not readily graze leafy spurge (Shubarth 1997), and so would not provide weed control through grazing. The spread of leafy spurge up draws and onto the upland grassland areas is highly probable with high intensity grazing.

Spotted knapweed is present on the property. Elk would utilize spotted knapweed during winter and early spring when the protein content is high, but less so during the flowering and seed production stage (Thompson 1996). The landowner is presently using herbicides in an attempt to control both spotted knapweed and leafy spurge. Feeding weed seed free hay and/or pellets would help reduce the likelihood of introducing new noxious weed species, and slow the spread of existing noxious weeds (Freeman 1997).

NO ACTION:

The no action alternative would result in no changes in existing vegetation within the proposed game farm.

COMMENTS:

Required Stipulations:

None

Recommended Mitigation Measures

- Maintain a reasonable stocking rate for elk that would maintain adequate vegetative cover to maintain and/or stabilize soils; seed and irrigate (where possible) highly disturbed areas to establish vegetative cover which would help stabilize soils and provide some forage for elk;

- Keep elk off seeded areas until vegetation becomes established;

- Institute a rest-rotation grazing system to optimize vegetative productivity and minimize vegetation and soil degredation; use only certified weed seed free hay or pellets to feed elk; and

- Collaborate with the County Weed and Control District in the design and implementation of a weed control plan for the game farm.

REFERENCES:

Freeman, J. 1997. Personal Communication with J. Freeman, weed supervisor, Cascade County Weed and Mosquito Control and Candace Durran, range vegetation specialist, June 30, 1997.

Neuman, S. 1997. Personal Communication with William Neuman, game farm applicant, Vaughn, Montana and Candace Durran, range vegetation specialist, June 30, 1997.

Shubarth, J. 1997. Personal communication with Jack Shubarth, Game farm operator Fairfield, Montana, and Candace Durran, June 9, 1997.

Thompson, M.J. 1996. Winter foraging response of elk to spotted knapweed removal. Northwest Science, Vol 70, No. 1. 1996. Pp 10-19.

PHYSICAL ENVIRONMENT

5. FISH/WILDLIFE Would the proposed action result in:	POTENTIAL IMPACT				CAN IMPACT BE MITIGATED	COMMENT INDEX
	UNKNOWN	NONE	MINOR	SIGNIFICANT		
a. Deterioration of critical fish or wildlife habitat?						
b. Changes in the diversity or abundance of game species?						
c. Changes in the diversity or abundance of nongame species?						
d. Introduction of new species into an area?						
e. Creation of a barrier to the migration or movement of animals?						
f. Adverse effects on any unique, rare, threatened, or endangered species?						
g. Increase in conditions that stress wildlife populations or limit abundance (including harassment, legal or illegal harvest or other human activity)?						
h. Increased risk of contact between game farm animals and wild game?						
i. Increased risk to wildlife health from disease?						

AFFECTED ENVIRONMENT:

The proposed game farm is located on bottomlands and breaks along Muddy Creek in central Montana. This area has been previously used to pasture and winter feed cattle, and store hay. Native vegetation within this area has been highly modified. The bottomland area contains constructed wetlands but these would not be included within the enclosure. These wetlands normally contain water during spring but water levels may fall considerably by late summer. These wetland sites are used by waterfowl and shorebirds. The bottomland area contains some cottonwood trees and willows, and supports some of the more common neotropical migrant birds. A few mule deer use the area and they generally are associated with the breaks of Muddy Creek and some white-tailed deer occur along Muddy Creek (Olsen 1997; Neuman 1997). The main mule deer winter range in the area is located near the Sun River south of the proposed game farm (**Figure 3**). Pronghorn are uncommon in the area possibly due to habitat fragmentation by agriculture in the uplands and broken topography along Muddy Creek. A few elk (usually bulls) are reported to pass through this area each summer (Olsen 1997). It is also likely that mountain lions move through the Muddy Creek drainage. The area does not represent important habitat for any Federally listed threatened or endangered species although bald eagle and peregrine falcons could be migratory through this area. There have not been any confirmed wolf sightings in the vicinity of the proposed game farm.

PROPOSED ACTION:

5(a) The Proposed Action would include managing up to 60 domestic elk on approximately 35 acres. The area enclosed by the proposed game farm would consist of approximately 50% upland breaks habitat and 50% bottomland habitat. The proposed action would not result in a significant loss of habitat for big game species because of the limited size of the enclosure. In the upland areas, the conversion of native grasslands to agricultural crops has already significantly changed big game habitat in this area. Some nutrient enriched water runoff during snow melt and major storm events

may occur. This water would flow into Muddy Creek, but water quality in this drainage is already poor due to irrigation return water and extensive cultivation of the uplands in the Muddy Creek drainage basin. There would be no expected impacts to aquatic systems in this area resulting from the proposed game farm operation.

5(b) Mountain lions occasionally pass through this area and may be attracted to the game farm due to the concentration of domestic elk. Lions are capable of entering the enclosure and although live capture and removal is possible, it is not without risks. This may affect individuals but not populations. There is a possibility that wild deer may enter the enclosure especially during periods of drifted snow in the winter. Wild ungulates exposed to domestic elk would likely be destroyed rather than released back to the wild. This may affect individuals but not populations.

5(e) The 35-acre enclosure may alter local movement of some individual wild deer, or transitory elk forcing them to reroute their daily movement around the exterior enclosure fence. However, due to the limited size of the enclosure this would not be a significant impact.

5(f) No Federally listed threatened or endangered species are known to inhabit the proposed game farm or adjacent areas. The bald eagle and peregrine falcon may cross this area during periods of migration but the proposed game farm would not influence these species.

5(h) The high potential for soil shrink-swell and frost heaving could cause minor to significant damage to structures and fences resulting in a perimeter fence that is not game-proof.

5(i) There is an undetermined potential of domestic elk carrying or becoming infected with a contagious wildlife disease or parasite such as tuberculosis, chronic wasting disease, or meningeal worm and then coming in contact (through the fence, nose-to-nose, nose-to-soil, or ingress/egress) with wild deer, elk or other wildlife. Release of a contagious disease in the wild could severely impact native wildlife populations. It is also possible that diseases and parasites carried by wild elk could be introduced to domestic elk with equally severe impacts. Ingress of wild elk, deer, and moose would likely result in the destruction of the trespassing animals.

NO ACTION:

No wildlife related impacts are expected to occur under the No Action Alternative. Livestock grazing of this area would be expected to continue under the No Action Alternative.

CUMULATIVE EFFECTS:

The fencing of 35 acres of modified native prairie and riparian habitat in association with extensive conversion of grasslands to agricultural crops would represent a very minor cumulative loss of native grassland to big game species in the area. The riparian habitat at this site has already been highly modified, and better riparian habitat is widely available along Muddy Creek.

COMMENTS:

Required Stipulations:

Report the ingress of any wild game animals or egress of domestic elk to FWP immediately. The report must contain the probable reason why or how ingress/egress was achieved.

This stipulation is imposed to mitigate potentially significant risk to wildlife health posed by the proposed game farm. Risk to wildlife health from contact between game farm animals and wild game is potentially significant due to the following factors:

- the site would be located in an area currently utilized by wild game;

- fencing would cross steep terrain, increasing the risk of wild deer jumping the fence;

- site soil characteristically expands and contracts with changes in moisture content that poses a risk to fence integrity due to frost heaving (See Land Resources, Section 1).

The information provided by the stipulation would help both the applicant and FWP to address ingress and egress incidents and to minimize contact between wild and domestic animals. This stipulation, in addition to existing FWP fencing and wildlife protection requirements, would effectively reduce the risk to wildlife health to below significant.

Recommended Mitigation Measures:

The following standard game farm management practices would help to minimize impacts to free ranging fish and wildlife species.

- Store hay, feed, and salt away from exterior fences or enclosed in bear-resistant containers or buildings.

- Feed game farm animals at interior portions of the enclosure and not along the perimeter fence.

- Remove dead animals, excess fecal material, and waste feed from the game farm and place at an approved site not likely to be used by humans, and domestic animals and wild animals.

- Inspect the exterior game farm fence on a regular basis and immediately after events likely to damage the fence to insure its integrity with respect to trees, burrowing animals, predators and other game animals.

- If fence integrity or ingress/egress becomes a problem, adjustment of fence requirements to include double fencing or increased height may become necessary.

- During winters of exceptional snow cover, remove snow on either side the of the enclosure fence to maintain an 8-foot fence height to prevent ingress and egress.

- Mitigate corrosion of perimeter fence structures by using coated steel fence posts and bottom wire and sulfate resistant concrete.

- Mitigate frost heaving risks to the game-proof fencing by designing engineered foundations.

- Risk of disease epidemic or heavy parasite infections among domestic elk can be minimized by maintaining a reasonable domestic elk stocking rate in relation to the enclosure size, periodic removal of domestic elk manure from concentration areas, and development of a disease immunization and parasite treatment protocol as applicable to domestic elk.

REFERENCES:

Olsen, 1997. Personal communication with Gary Olsen, Fish, Wildlife and Parks wildlife biologist, Region 4 and Dr. Craig Knowles, FaunaWest Wildlife Consultants. July 1997.

Newman, 1997. Personal communication with Skip Newman game farm applicant during site reconnaissance by Dr. Craig Knowles, FaunaWest Wildlife Consultants. July 1997.

HUMAN ENVIRONMENT

6. NOISE EFFECTS Would the proposed action result in:	POTENTIAL IMPACT				CAN IMPACT BE MITIGATED	COMMENT INDEX
	UNKNOWN	NONE	MINOR	SIGNIFICANT		
a. Increases in existing noise levels?					Yes	6(a)
b. Exposure of people to severe or nuisance noise levels?						

AFFECTED ENVIRONMENT:

Because the proposed game farm is not located in the vicinity of an industrial or commercial facility or in an area with heavy traffic, noise levels are typically very low.

PROPOSED ACTION:

6(a) The Proposed Action would result in a minor short term increase in existing noise levels from fence construction, land clearing, and other activities conducted to develop the expansion area. Some increase in noise levels would occur due to bugling during mating season. There would be no exposure of people to severe or nuisance noise levels as a result of the Proposed Action. The proposed game farm is not located near the home or workplace of anyone but the applicant.

NO ACTION:

Increased noise levels would not occur under the No Action Alternative.

CUMULATIVE EFFECTS:

The cumulative effects of past, present and reasonably foreseeable activities would be similar to those described for the Proposed Action.

COMMENTS:

Required Stipulations

None

Recommended Mitigation Measures

Impacts from construction noise can be reduced by limiting noisy activities to daylight hours and completing construction promptly.

HUMAN ENVIRONMENT

7. LAND USE Would the proposed action result in:	POTENTIAL IMPACT				CAN IMPACT BE MITIGATED	COMMENT INDEX
	UNKNOWN	NONE	MINOR	SIGNIFICANT		
a. Alteration of or interference with the productivity or profitability of the existing land use of an area?						7(a)
b. Conflict with a designated natural area or area of unusual scientific or educational importance?						
c. Conflict with any existing land use whose presence would constrain or potentially prohibit the proposed action?						
d. Conflict with any existing land use that would be adversely affected by the proposed action?						
e. Adverse effects on or relocation of residences?						

AFFECTED ENVIRONMENT:

The principal land use of the proposed game farm area and vicinity is grass range land (**Figure 2**).

PROPOSED ACTION:

7(a) The proposed game farm is consistent with existing land uses. The area is not zoned for a specific use and is currently utilized by wild game. It could potentially be developed for residential or commercial use; however, there are currently no plans for a major subdivision (six or more houses) in the vicinity of the proposed game farm. Development of land in the area is not anticipated in the near future (Neuman 1997). The use of the proposed game farm area for an elk farm may increase or decrease the value of the land depending on the financial success of the game farm and land husbandry practices.

NO ACTION:

If the proposed game farm area were not fenced, the game farm area would likely be used for range land and unused open space.

CUMULATIVE EFFECTS:

The land use described in the Proposed Action is consistent with existing land use in the vicinity of the proposed game farm area (**Figure 2**). Because no proposals or applications for future subdivisions in the vicinity of the proposed game farm are currently on file with Teton County, and no past or present activities have adversely affected the game farm area, no potential cumulative effects on land use from the Proposed Action and past, present and future actions to land use are anticipated.

COMMENTS:

Because impacts to land use are potentially positive, no mitigation measures are recommended.

HUMAN ENVIRONMENT

8. RISK/HEALTH HAZARDS Would the proposed action result in:	POTENTIAL IMPACT				CAN IMPACT BE MITIGATED	COMMENT INDEX
	UNKNOWN	NONE	MINOR	SIGNIFICANT		
a. Risk of dispersal of hazardous substances (including, but not limited to chemicals, pathogens, or radiation) in the event of an accident or other forms of disruption?					Yes	8(a)
b. Creation of any hazard or potential hazard to domestic livestock?					Yes	8(b)
c. Creation of any hazard or potential hazard to human health?					Yes	8(a)

AFFECTED ENVIRONMENT:

The proposed game farm would be located in an area that is sparsely populated. Primarily land use in the vicinity of the Proposed Action is rangeland and crop pasture. Receptors of potential disease transmittal from game farm animals are primarily hunters and cattle managed on nearby rangeland. Existing DoL requirements insure that game farm animals are routinely tested for disease when imported or there is a change in ownership. No game farm animal is permitted to enter the state or change ownership if infected with or exposed to brucellosis, tuberculosis, or any other infectious, contagious, or communicable animal disease (81-2-701, MCA). While this precaution does not eliminate the risk of disease transmission to humans or livestock, it reduces the risk such that the Proposed Action presents a minor impact.

PROPOSED ACTION:

8(a) Operation of the proposed game farm would not require the storage, use or disposal of hazardous substances such as chemicals listed under Title III of the Superfund Amendments and Reauthorization Act of 1986 (EPA 1995), or radioactive substances regulated under the Nuclear Regulatory Commission. However, spread of a contagious wildlife disease may directly or indirectly (depending upon the nature of the disease) effect the human environment by reducing the number of wild deer and elk available for hunting or exposing hunters to diseases that are contagious to humans as well.

8(b) There is an undetermined potential of domestic elk carrying or becoming infected with a contagious wildlife disease or parasite such as tuberculosis, chronic wasting disease, or meningeal worm and then coming in contact (through the fence, nose-to-nose, nose-to-soil, or egress) with domestic livestock.

NO ACTION:

No impact to human health would be expected to occur as a result of the No Action Alternative.

CUMULATIVE EFFECTS:

No past or present activities have adversely affected the game farm area, no potential cumulative effects on land use beyond those described under the Proposed Action are anticipated.

COMMENTS:

Required Stipulations

none

Recommended Mitigation Measures

The game farm mitigation measures listed in Section 5 (Fish and Wildlife) of this EA are applicable to this section.

REFERENCES

EPA 1995b. Title III Lists of Lists. Consolidated List of Chemicals Subject to the Emergency Planning and Community Right-To-Know Act and Section 112(r) of the Clean Air Act, As Amended and Title III of the Superfund Amendments and Reauthorization Act of 1986.

HUMAN ENVIRONMENT

9. COMMUNITY IMPACT Would the proposed action result in:	POTENTIAL IMPACT				CAN IMPACT BE MITIGATED	COMMENT INDEX
	UNKNOWN	NONE	MINOR	SIGNIFICANT		
a. Alteration of the location, distribution, density, or growth rate of the human population of an area?						9(a)
b. Alteration of the social structure of a community?						9(a)
c. Alteration of the level or distribution of employment or community or personal income?						9(c)
d. Changes in industrial or commercial activity?						
e. Changes in historic or traditional recreational use of an area?						9(a)
f. Changes in existing public benefits provided by affected wildlife populations and wildlife habitats (educational, cultural or historic)?						
g. Increased traffic hazards or effects on existing transportation facilities or patterns of movement of people and goods?						

PROPOSED ACTION:

9(a) The Proposed Action is consistent with the land use and values of the community in the vicinity of the proposed game farm area (**Figure 2**). Subdivision development of land in the area is not anticipated in the near future (see Land Use, Section 7).

9(c) No additional employees would be hired as a result of the Proposed Action. While the Proposed Action may increase the income level for the applicant and increase taxes paid to the county, it is not expected to significantly impact the community income levels.

NO ACTION:

No Adverse impacts to the community would result from the No Action Alternative.

CUMULATIVE EFFECTS:

No adverse impacts to the community are expected to result from the Proposed Action and past, present and reasonably foreseeable activities in the vicinity of the proposed game farm.

COMMENTS:

No mitigation measures are required or recommended.

HUMAN ENVIRONMENT

10. PUBLIC SERVICES/TAXES/ UTILITIES Would the proposed action result in:	POTENTIAL IMPACT				CAN IMPACT BE MITIGATED	COMMENT INDEX
	UNKNOWN	NONE	MINOR	SIGNIFICANT		
a. A need for new or altered government services (specifically an increased regulatory role for FWP and Dept. of Livestock)?						10(a)
b. A change in the local or state tax base and revenues?						10(b)
c. A need for new facilities or substantial alterations of any of the following utilities: electric power, natural gas, other fuel supply or distribution systems, or communications?						

PROPOSED ACTION

10(a) Approval of a license would require supervision by FWP personnel including inspections.

10(b) Implementation of the Proposed Action would provide the county with similar tax revenue paid by the applicant if the proposed game farm area continued to be used for cattle grazing. The collected taxes would go into the county general fund and the local school district.

NO ACTION:

No additional revenue would be collected from the applicant under the No Action Alternative.

CUMULATIVE EFFECTS:

No adverse cumulative effects to public services, taxes and utilities are anticipated to result from the Proposed Action and past, present and reasonably foreseeable activities in the vicinity of the proposed Neuman game farm.

COMMENTS:

No mitigation measures are recommended or required.

HUMAN ENVIRONMENT

11. AESTHETICS/RECREATION Would the proposed action result in:	POTENTIAL IMPACT				CAN IMPACT BE MITIGATED	COMMENT INDEX
	UNKNOWN	NONE	MINOR	SIGNIFICANT		
a. Alteration of any scenic vista or creation of an aesthetically offensive site or effect that is open to public view?						
b. Alteration of the aesthetic character of a community or neighborhood?						
c. Alteration of the quality or quantity of recreational/tourism opportunities and settings?						

PROPOSED ACTION:

No adverse impacts to the public view, the character of the neighborhood, or to recreational opportunities in the area would result from the Proposed Action.

NO ACTION:

No adverse impacts to the public view, the character of the neighborhood, or to recreational opportunities in the area would result from implementation of the No Action Alternative.

CUMULATIVE IMPACTS:

Impacts from the Proposed Action and past, present and reasonably foreseeable activities in the vicinity of the proposed game farm would be similar to those described for the Proposed Action.

COMMENTS:

No mitigation measures are recommended or required.

HUMAN ENVIRONMENT

12. CULTURAL/HISTORICAL RESOURCES Would the proposed action result in:	POTENTIAL IMPACT				CAN IMPACT BE MITIGATED	COMMENT INDEX
	UNKNOWN	NONE	MINOR	SIGNIFICANT		
a. Destruction or alteration of any site, structure or object of prehistoric, historic, or paleontological importance?					Yes	12(a)
b. Physical change that would affect unique cultural values?						
c. Effects on existing religious or sacred uses of a site or area?						12(a)

PROPOSED ACTION:

12(a) No cultural resources for the proposed game farm area are currently on file with the State Historical Preservation Office (SHPO 1997). A previous cultural resource inventory in the area conducted by the U.S. Bureau of Reclamation (Bureau of Reclamation 1985) determined that no cultural resources are present in the vicinity of the proposed game farm. Based on the SHPO database information and the Bureau of Reclamation inventory, there is a low likelihood of unknown or unrecorded cultural properties in the project area.

NO ACTION:

Similar impacts are expected to occur if the site is used for agricultural purposes. If the site is developed for commercial or residential use, potential impacts to cultural resources from excavations may increase.

CUMULATIVE EFFECTS:

Impacts from the Proposed Action and past, present and reasonably foreseeable activities would be similar to those described under the Proposed Action.

COMMENTS:

Required Stipulations:

None

Recommended Mitigation Measures

Stop work in the area of any observed archeological artifact. Report discovery of historical objects to:

Montana Historical Society
Historic Preservation Office
1410 8th Avenue; P.O. Box 201202
Helena, Montana 59620
(406) 444-7715.

If work stoppage in the area containing observed artifacts is not possible, record the location and position of each object, take pictures and preserve the artifact(s).

REFERENCES

State Historic Preservation Office (SHPO) 1997. Letter from Phil Melton, Cultural Records Manager, Montana Historical Society, State Historic Preservation Office, to Alice Stanley, Maxim Technologies. July 7, 1997.

U.S. Bureau of Reclamation 1985. A Cultural Resource Survey of Gravel Pits and Lands Administrated by the Bureau of Reclamation: Sun River Project. by Marv Keller. October 1985.

SUMMARY EVALUATION OF SIGNIFICANCE

13. Would the proposed action, considered as a whole:	POTENTIAL IMPACT				CAN IMPACT BE MITIGATED	COMMENT INDEX
	UNKNOWN	NONE	MINOR	SIGNIFICANT		
a. Have impacts that are individually limited, but cumulatively considerable? (A project or program may result in impacts on two or more separate resources which create a significant effect when considered together or in total.)						
b. Involve potential risks or adverse effects which are uncertain but extremely hazardous if they were to occur?					Yes	13(b)
c. Potentially conflict with the substantive requirements or any local, state, or federal law, regulation, standard or formal plan?						
d. Establish a precedent or likelihood that future actions with significant environmental impacts would be proposed?						13(d)
e. Generate substantial debate or controversy about the nature of the impacts that would be created?						13(e)

PROPOSED ACTION

13(b) There is an undetermined potential of domestic elk carrying or becoming infected with a contagious wildlife disease or parasite such as tuberculosis, chronic wasting disease, or meningeal worm and then coming in contact (through-the-fence, nose-to-nose, nose-to-soil, or ingress/egress) with wild deer, elk, or other wildlife. Release of a contagious disease in the wild could severely impact native wildlife populations. It is also possible that diseases and parasites carried by wild elk could be introduced to domestic elk with equally severe impacts. Ingress of wild elk, deer, and moose would likely result in the destruction of the trespassing animals.

Spread of a contagious wildlife disease may directly or indirectly (depending upon the nature of the disease) effect the human environment by reducing the number of wild deer and elk available for hunting or exposing hunters to diseases that are contagious to humans as well.

13(d) Because effective game farm management is a function of scale, any future expansion applications would likely result in increasingly significant environmental impacts.

13(e) The nature of impacts to wildlife from elk game farms is currently under debate in Montana and other states. The following issues are of greatest concern:

- Disease transmission from game farm elk to wildlife is possible if the game farm elk is diseased and has an opportunity to come into contact with wild elk or deer.
- The potential for wild animals to ingress into to the game farm. Ingressing elk and deer are generally destroyed, typically by FWP wardens, to prevent potential disease transmittal. Ingressing mountain lions and black bears may be immobilized and removed.
- Hybridization of Montana's game species resulting from the ingress/egress of animals on game farms.

- Theft of wild animals for financial gain on game farms.

These issues are particularly controversial when game farms block migration routes or consume significant areas of land historically utilized by wild game. Inadequate perimeter fencing and fence monitoring on the part of the game farm operator can also lead to ingress and egress events and nose-to-nose contact between wild game and game farm animals. Because the proposed game farm area is too small to effectively block big game migration routes or consume a significant portion of land utilized by wild game; and because the proposed perimeter fence is determined to be adequate for the size, location and type of game farm, the controversial nature of the Proposed Action is minor.

NARRATIVE SUMMARY EVALUATION OF SIGNIFICANCE CRITERIA

a. Does the proposed action have impacts that are individually minor, but cumulatively considerable? (A project may result in impacts on two or more separate resources which create a significant effect when considered together or in total.)

No, however, the year-long use of the enclosure by up to 60 elk would result in nutrient laden runoff into Muddy Creek during periods of snow melt and significant precipitation events. Muddy Creek already receives effluent from irrigation return flow, and runoff from land used for crops and wintering cattle. The addition of runoff from the proposed game farm would be less than significant when compared to impacts already occurring to this drainage system by the above factors. In addition, runoff from the game farm area would not be greater than if the area were used to pasture and winter domestic cattle at the stocking rate of previous years (up to 350 head).

b. Does the proposed action involve potential risks or adverse effects which are uncertain but extremely hazardous if they were to occur?

Yes. An unlikely, but extremely hazardous event should it occur, would be the spread of a disease or parasite from domestic elk to wild elk, deer or moose. The risk of this event occurring can be reduced by following the mitigations listed in Section 5.

c. Description and analysis of reasonable alternatives (including the no action alternative) to the proposed action whenever alternatives are reasonably available and prudent to consider and a discussion of how the alternatives would be implemented:

No Action Alternative: The No Action Alternative would avoid all potential impacts listed above. This site would likely be grazed by domestic cattle, horses or other livestock should the No Action Alternative be selected. The No Action Alternative would probably not result in exclusion of wildlife from this site.

d. Evaluation and listing of mitigation, stipulation, or other control measures enforceable by the agency or another government agency:

This section provides an analysis of impacts to private property by proposed restrictions or stipulations as required under 75-1-201, MCA and the Private Property Assessment Act, Chapter 462, Laws of Montana (1995). The analysis provided in this EA is conducted in accordance with implementation guidance issued by the Montana Legislative Services Division (EQC 1996). A completed checklist designed to assist state agencies in identifying and evaluating proposed agency actions, such as imposed stipulations, that may result in the taking or damaging of private property is included in Appendix B.

Stipulation

Report the ingress of any wild game animals or egress of domestic elk to FWP immediately. The report must contain the probable reason why or how ingress/egress was achieved.

Restriction on Private Property Use

This stipulation restricts the use of private property by effectively requiring monitoring the proposed game farm frequently for ingress or egress events. The stipulation is consonant with the current FWP requirement to report egress events immediately [ARM 12.6.1517 (2)].

Alternatives

Do not report ingress events to FWP immediately.

This stipulation would not adequately address the significant impact of risk to wildlife health. Ingressing wild animals must be detected immediately to prevent contact with wild game after contact with game farm animals.

Benefits From Imposing The Stipulation

This stipulation is imposed to mitigate potentially significant risk to wildlife health posed by the proposed game farm. Risk to wildlife health from contact between game farm animals and wild game is potentially significant due to the following factors:

- the site would be located in an area currently utilized by wild game;
- fencing would cross steep terrain, increasing the risk of wild deer jumping the fence; and
- site soil characteristically expands and contracts with changes in moisture content that poses a risk to fence integrity due to frost heaving (See Land Resources, Section 1).

The information provided by the stipulation would help both the applicant and FWP to address ingress and egress incidents and to minimize contact between wild and domestic animals. This stipulation, in addition to existing FWP fencing and wildlife protection requirements, would effectively reduce the risk to wildlife health to below significant.

Types of Expenditures The Stipulation Would Require

The stipulation to require immediate notice of ingress and egress events would not impose any additional expenditures beyond those necessary to immediately report egress events in accordance with ARM 12.6.1517(2).

Stipulation's Effect on Property Values

None.

PART III. NARRATIVE EVALUATION AND COMMENT

Wildlife use of the area and potential for through-the-fence contact with game farm animals (consider year-around use, traditional seasonal habitat use, and location of travel routes and migration corridors).

The proposed game farm is located in low density deer habitat, and wild elk on occasion pass through this area and they might be attracted to the game farm by domestic elk. Nose-to-nose contact is most likely to occur between wild and domestic elk and unlikely to occur between domestic elk and wild deer or wild pronghorn. In addition, transitory wild elk may be attracted to domestic elk during the rut. Transmission of disease or parasites may occur during nose-to-nose contact, nose-to-body contact, and by contacting vegetation and feces along the fence line. Disease transmission may occur from wild ungulates to domestic elk and from domestic elk to wild ungulates. Risk of disease transmission can be reduced by maintaining the integrity of the enclosure fence, by maintaining a healthy domestic elk population, and by following the above listed mitigation recommendations.

Potential for escape of game farm animals or ingress of wildlife (consider site-specific factors that could reduce the effectiveness of perimeter fences built to standards outlined in Rule 12.6.1503A, including steepness of terrain, winter snow depths/drifting, susceptibility of fences to flood damage, etc.).

The proposed game farm fence would be constructed in accordance with FWP requirements or an alternative game-proof fence design. The alternative design would be allowed only if the applicant sought and received a waiver to the existing rules (**Appendix A**).The proposed enclosure site is located on bottomland and gently sloping uplands with good to moderate site potential for construction of an enclosure. The enclosure fence would pass through two small areas with large cottonwood trees and these trees would be limbed, topped or removed as required to prevent trees and branches from falling and breaking the integrity of the enclosure fence.

The proposed enclosure site is located at an elevation of about 3,600 feet and the expected snow levels during winter would be under 1 foot. However, portions of the proposed game farm has a high potential for drifting during blizzards. The development of significant drifts would be dependent upon storm characteristics and topography. Under these extreme conditions the height of the fence above compacted snow level may be sufficiently reduced to permit ingress of wild ungulates into the enclosure to gain access of supplemental feed. However, few wild deer and no elk would be expected to use this area during periods of major winter storms. Domestic elk may also be able to leave the enclosure during periods of excessive snow cover, and removal of snow drifts from the either side of the fence in drift prone areas may be necessary during winter.

Proportion (%) of the total habitat area currently used by wildlife that would be enclosed or otherwise impacted.

The enclosure would exclude resident wild deer from only a minor portion of the area they presently have access to. Although native prairie is not common in this area due to agricultural conversion, there are irrigated hay fields, tame pasture lands, and croplands that contain adequate forage for wild deer. Tree cover present at this site is not used by deer due to its proximity to buildings and the trimming and cutting of a few trees to accommodate the enclosure would not influence wild deer use of this area. The lack of significant pronghorn numbers in this area is probably due to extensive agricultural conversion of grasslands and the broken terrain. The enclosure of 35 acres of modified grassland and riparian habitat would not seriously effect the few remaining pronghorn in this area. Other wildlife species would be unaffected by the proposed 35-acre enclosure.

PART IV. EA CONCLUSION

1. **Based on the significance criteria evaluated in this EA, is an EIS required?**

   No, the appropriate level of analysis for the Proposed Action is a mitigated EA because:

   - all impacts of the Proposed Action have been accurately identified in the EA, and
   - all identified significant impacts would be mitigated to minor or none.

2. **Describe the level of public involvement for this project if any and, given the complexity and the seriousness of the environmental issues associated with the proposed action, is the level of public involvement appropriate under the circumstances?**

   Upon completion of the Draft EA, a notice is sent to adjoining landowners, the local newspapers, and other potentially affected interests, explaining the project and asking for input during a 21-day comment period. The Draft EA is also available to the public from the Fish, Wildlife and Parks office in Great Falls at the address and phone listed in the introduction summary of this EA and through the State Bulletin Board System during the public comment period.

3. **Duration of comment period if any:** 21 days.

4. **Name, title, address and phone number of the Person(s) Responsible for Preparing the EA:**

Fish, Wildlife and Parks

Gary Olsen, Wildlife Biologist, Region 4
Gary Benson, Warden Sargent, Region 4
Karen Zackheim, FWP Game Farm Coordinator

Maxim Technologies

Alice Stanley, Project Manager
Doug Rogness, Hydrologist
Mike Cormier, Soil Scientist
Terry Grotbo, MEPA Specialist
Sally Staley, GIS and Graphics
John Greenheck, Engineer

FaunaWest Wildlife Consultants

Craig Knowles, Wildlife Biologist

Other

Candace Durran, Vegetation Specialist

APPENDIX A

FISH, WILDLIFE AND PARKS FENCING REQUIREMENTS

(c) third copy to purchaser or transferee, which must also accompany the animals to their destination; and

(d) fourth copy retained by the game farm operator at origin.

(3) The licensee must account for all bill of sale/transportation receipts.

(4) Transactions must be recorded in the record book(s) of the affected game farm licensee(s) within five days of the transaction. (History: Secs. 81-3-202, 87-4-422 MCA; IMP, Secs. 87-4-415, 81-3-210, 87-4-422 MCA; NEW, 1992 MAR p. 1017, Eff. 5/15/92.)

12.6.1503 FENCING REQUIREMENTS (IS HEREBY REPEALED) (History: Sec. 87-4-422 MCA; IMP, Sec. 87-4-416 MCA; NEW, 1984 MAR p. 250, Eff. 1/27/84; REP, 1992 MAR p. 1017, Eff. 5/15/92.)

12.6.1503A FENCING REQUIREMENTS (1) After May 15, 1992, applicants for a game farm license must comply with the following fencing standards:

(a) Conventional perimeter fences must be, at a minimum, eight feet above ground level for their entire length. The bottom six feet must be mesh of sufficient size to prevent wild animals from entering and game farm animals from escaping. Supplemental wire required to attain a height of 8 feet may be smooth, barbed, or woven wire (at least 12 1/2 gauge) with strands spaced not more than six inches apart.

(b) Perimeter fences constructed of high tensile wire must be supported by a post or a stay at minimum intervals of 8 feet.

(c) Conventional perimeter fences must be at least 12 1/2 gauge woven wire, 14 1/2 gauge high-tensile woven wire, chain link, non-climbable woven fence, or other fence approved by the department of fish, wildlife, and parks.

(i) If the wire used is not a full 8 feet in height, it must be overlapped one row and securely fastened at every other vertical row or woven together with cable.

(d) Electric fencing materials may be used on perimeter fences only as a supplement to conventional fencing materials.

(e) All gates in the perimeter fence must be self-closing, equipped with two locking devices and installed in locations that have been approved by the department of fish, wildlife, and parks. Double gates may be required at points in the perimeter fence subject to frequent vehicle traffic that is not related to operation of the game farm.

(f) Posts used in the perimeter fence must be:

(i) of material of sufficient strength to keep game farm animals securely contained and wild animals from entering;

(ii) extended at least 8 feet above ground level;

(iii) spaced no more than 24 feet apart with stays or supports at 8 foot intervals between the posts;

(iv) braced with wood or with suitable metal material properly set in concrete, at all corners.

(2) Game farm perimeter fences in place as of May 15, 1992 that comply with the previously existing 7 1/2 foot height requirement and have been found to be adequate are not subject to the requirements of this rule (1)(a) through (f).

(a) If fences do not comply with the previously existing 7 1/2 foot height requirement or when reconstruction or replacement of existing 7 1/2 perimeter fences becomes necessary, they shall be constructed to meet the fencing standards outlined in (1).

(3) All open topped enclosures holding game farm carnivores must meet the following requirements:

(a) a perimeter fence at least 8 feet in height constructed of at least 9 gauge woven wire chain link or solid material that cannot be destroyed by the species contained therein;

(b) the perimeter barrier must be supported by a post or a stay at 10 foot intervals;

(c) an overhang of barbed wire or electric wire installed at the top of the perimeter fence or other configuration that precludes escape;

(d) buried mesh wire (minimum 11 gauge) extending laterally 3 feet to the inside of the enclosure for the length of the perimeter fence (to prevent carnivores from digging under the fence and escaping);

(e) any trees or obstacles that would allow carnivores to exit or enter the enclosure must be removed.

(4) All cages holding game farm carnivores must be of sufficient size (height, length and width) to prevent overcrowding and allow exercise and must meet the following requirements:

(a) a cage top constructed of at least 11 gauge woven wire or chain link;

(b) a floor made of cement or concrete at least 3 inches thick into which metal fence posts are permanently secured or a floor that consists of chain link or similar material that will preclude the animal digging through the floor to escape.

(5) Gates on carnivore enclosures and cages must be self-closing and have double locks.

(6) Gates are prohibited in fences that are shared in common by neighboring game farms.

(7) The fence must be maintained in a game-proof condition at all times to prevent animals from escaping from or entering the game farm premises. If game farm animals or wild animals do pass through, under, or over the fence for any reason, the licensee must supplement the fence to prevent continued passage. (History: Sec. 87-4-422 MCA; IMP, Secs. 87-4-409, 87-4-422 MCA; NEW, 1992 MAR p. 1017, Eff. 5/15/92.)

12.6.1504 REPORTING (IS HEREBY REPEALED) (History: Sec. 87-4-422 MCA; IMP, Sec. 87-4-416 MCA; NEW, 1984 MAR p. 250, Eff. 1/27/84; REP, 1992 MAR p. 1017, Eff. 5/15/92.)

12.6.1504A GAME FARM REPORTING (1) Reports must be recorded on the forms provided by the department of fish, wildlife, and parks and must be filled out completely and accurately.

(2) No pages in the game farm record book may be discarded. Voided pages must be sent to the department of fish, wildlife, and parks (Helena office).

(3) The annual game farm report must be submitted to the department of fish, wildlife, and parks (Helena office) by January 31.

(4) Renewal of a game farm license is contingent upon timely and accurate completion and submittal of required reports.

(5) Game farm record books and reports must be kept on the premises of the licensed game farm, residence of the game farm operator or manager or his/her principal place of business, so long as that location is within the state of Montana. The designated location of the game farm record books and reports must be declared to the department of fish, wildlife, and parks (Helena office).

(6) Purchases, sales, escapes, recaptures, deaths and births must be reported in the game farm record book provided by the department of fish, wildlife, and parks.

(7) Game farm operators are requested to notify the department of fish, wildlife, and parks (regional warden captain), in advance of his/her annual animal census. (History: Sec. 87-4-422 MCA; IMP, Secs. 87-4-417, 87-4-422 MCA; NEW, 1992 MAR p. 1017, Eff. 5/15/92.)

12.6.1505 RECOVERY OF ESCAPED ANIMALS (IS HEREBY REPEALED) (History: Sec. 87-4-422 MCA; IMP, Sec. 87-4-416 MCA; NEW, 1984 MAR p. 250, Eff. 1/27/84; REP, 1992 MAR p. 1017, Eff. 5/15/92.)

APPENDIX B

PRIVATE PROPERTY ASSESSMENT CHECKLIST

PRIVATE PROPERTY ASSESSMENT ACT CHECKLIST

The 54th Legislature enacted the Private Property Assessment Act, Chapter 462, Laws of Montana (1995). The intent of the legislation is to establish an orderly and consistent process by which state agencies evaluate their proposed actions under the "Takings Clauses" of the United States and Montana Constitutions. The Takings Clause of the Fifth Amendment of the United States Constitution provides: "nor shall private property be taken for public use, without just compensation." Similarly, Article II, Section 29 of the Montana Constitution provides: "Private property shall not be taken or damaged for public use without just compensation..."

The Private Property Assessment Act applies to proposed agency actions pertaining to land or water management or to some other environmental matter that, if adopted and enforced without compensation, would constitute a deprivation of private property in violation of the United States or Montana Constitutions.

The Montana State Attorney General's Office has developed guidelines for use by state agency to assess the impact of a proposed agency action on private property. The assessment process includes a careful review of all issues identified in the Attorney General's guidance document (Montana Department of Justice 1997). If the use of the guidelines and checklist indicates that a proposed agency action has taking or damaging implications, the agency must prepare an impact assessment in accordance with Section 5 of the Private Property Assessment Act. For the purposes of this EA, the questions on this checklist refer to the following required stipulation(s):

Report the ingress of any wild game animals or egress of domestic elk to FWP immediately. The report must contain the probable reason why or how ingress/egress was achieved.

PRIVATE PROPERTY ASSESSMENT ACT CHECKLIST

DOES THE PROPOSED AGENCY ACTION HAVE TAKINGS IMPLICATIONS UNDER THE PRIVATE PROPERTY ASSESSMENT ACT?

YES	NO		
X		1.	Does the action pertain to land or water management or environmental regulation affecting private real property or water rights?
	X	2.	Does the action result in either a permanent or indefinite physical occupation of private property?
	X	3.	Does the action deprive the owner of all economically viable uses of the property?
	X	4.	Does the action deny a fundamental attribute of ownership?
	X	5.	Does the action require a property owner to dedicate a portion of property or to grant an easement? [If the answer is **NO**, skip questions 5a and 5b and continue with question 6.]
		5a.	Is there a reasonable, specific connection between the government requirement and legitimate state interests?
		5b.	Is the government requirement roughly proportional to the impact of the proposed use of the property?
	X	6.	Does the action have a severe impact on the value of the property?
	X	7.	Does the action damage the property by causing some physical disturbance with respect to the property in excess of that sustained by the public generally? [If the answer is **NO**, do not answer questions 7a-7c.]

DOES THE PROPOSED AGENCY ACTION HAVE TAKINGS IMPLICATIONS UNDER THE PRIVATE PROPERTY ASSESSMENT ACT?

YES	NO		
_____	_____	7a.	Is the impact of government action direct, peculiar, and significant?
_____	_____	7b.	Has government action resulted in the property becoming practically inaccessible, waterlogged, or flooded?
_____	_____	7c.	Has government action diminished property values by more than 30% and necessitated the physical taking of adjacent property or property across a public way from the property in question?

Taking or damaging implications exist if **YES** is checked in response to question 1 and also to any one or more of the following questions: 2, 3, 4, 6, 7a, 7b, 7c; or if **NO** is checked in response to questions 5a or 5b.

If taking or damaging implications exist, the agency must comply with § 5 of the Private Property Assessment Act, to include the preparation of a taking or damaging impact assessment. Normally, the preparation of an impact assessment will require consultation with agency legal staff.